DOCUMENT RESUME

ED 317 290 PS 018 683

AUTHOR Day, David E.; Libertini, Gail E.
TITLE Profiles of Children's Behavior in Various Lessons.
PUB DATE Mar 90
NOTE 37p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Behavior Change; *Behavior Patterns; Classroom Research; Cognitive Processes; Communication (Thought Transfer); *Context Effect; Elementary Education; Instructional Materials; Peer Relationship; Performance Factors; *Profiles; *Student Behavior
IDENTIFIERS Ecological Psychology; *Lesson Types

ABSTRACT

This study investigated the behavioral responses of eight children to five alternate lesson types. Barker's assertion of the coercive nature of setting was examined. Questions addressed were: (1) Do children having the same or similar lessons behave asimilarly or differently? (2) Do children change their patterns of behavior as they move from one lesson type to another? (3) What effects do features of the lesson have on shifts in the behavior of children? (4) What are the features of lessons which appear to evoke higher and lower order cognition and greater and lesser amounts of peer interaction? Four children were observed in each of two primary classrooms in a nongraded elementary school. Data on aspects of the instructional context and of children's cognitive functioning, language behavior, use of materials, interaction behavior, and involvement in tasks were continuously recorded. Barker's assertion was supported. Children did alter their behavior as they moved from one lesson type to another. It is suggested that there is a relationship between: (1) instructional format, source of lessson pacing, and size of the instructional group; and (2) children's cognitive, exploratory, and social interaction behavior. (Author/RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED317290

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Profiles of Children's Behavior in Various Lessons

by

David E. Day and Gail E. Libertini

School of Education

University of Massachusetts

Amherst, MA 01003

March, 1990

Address correspondence to:

David E. Day
School of Education
University of Massachusetts
Amherst, MA 01003

413-545-0615 or
413-545-0133

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David E. Day

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PS 018683

BEST COPY AVAILABLE

Profiles of Children's Behavior in Various Lessons

ABSTRACT

This paper reports on a study of the behavioral response of eight children to five alternative lesson types. Four children were observed in each of two primary classrooms in a non-graded elementary school. Data were continuously recorded on aspects of both the instructional context and the cognitive functioning, language behavior, materials use, interaction behavior, and task involvement of the children. The study was designed to investigate assumptions of person-environment interaction drawn from ecological psychology. In particular, Barker's assertion of the coercion of setting was examined and supported. Children did alter their behavior as they moved from one lesson type to another. A relationship was suggested between instructional format, source of lesson pacing, and size of the instructional group, and children's cognitive, exploratory, and social interaction behavior.

Introduction

The ecological critique of human behavior by Barker (1968) led to three generalizations: (1) human behavior changes from setting to setting in ways which meet the conditions of each setting, (2) the behavior of persons in any setting is more alike than different, and (3) a person's behavior tends to be consistent over time in the same or similar setting. Barker's analysis of person-environment interaction provided for behavioral variance in any setting, the expression of personal need, and the possibility for change in setting purpose as the consequence of person-environment interaction. Nonetheless, the essence of his critique is often stated in terms of the coercion of setting on human behavior.

There have been several studies of the behavior of young children in child care and education settings which, in one way or another, inquire about the accuracy of Barker's assertions. Smith and Connolly (1980) completed some carefully controlled studies of the effects of physical space, the amount and kind of materials, and adult roles on the behavior of nursery school children. They found that as environmental conditions changed, so too did the behavior of the participants. Weinstein (1977) found that the behavior of second graders could be influenced by making changes in the physical arrangements of the classroom such that the children exhibited more learning appropriate behavior.

Oxford, Morrison, and McKinney (1979) described the action structure of lessons and other learning activities in kindergarten with particular attention to the influence of the signal system on children's task involvement. They found that such factors as the size of the instructional group, children's influence on their action in any lesson, and instructional format all contributed to the proportion of time students spent on-task.

Studies like those just mentioned have focused mostly on structural characteristics of the classroom and their effect on children's behavior. Gump (1967), on the other hand, building on Barker's work, stressed the notion that classrooms are dynamic environments comprised of a series of temporally and spatially related behavior settings, each with a set of purposes and expectations potentially quite different from all others. His work suggested that children will of necessity change their behavior as they move from one setting to another - from reading to science, and from block play to the art corner - as a consequence of their perception of the demands of each setting.

Stodolsky (1988), building upon Gump's system, studied the context and behavior of fifth grade students in mathematics and social studies lessons. She documented variety in the daily experiences of children related to the subject matter being taught; social studies was not the same experience for children as mathematics even when taught by the same teacher. Furthermore, Stodolsky found that the

variance in children's behavior was greater in social studies than mathematics which she attributed to a mix of the values shared by teachers and children regarding the comparative importance of mathematics and social studies in the order of school things and an instructional format which seemed to reflect this value hierarchy. In all of this, the students, by and large, sought to understand and meet the conditions of each lesson, to seek engagement, and to remain curious and attentive.

This study builds upon Gump's elaboration of the Barker critique in ways similar to that of Stodolsky. The purpose is to describe and contrast the behavioral profiles of young children in typical lessons and activities varying along structural dimensions in an attempt to more fully understand the ways in which the Barker thesis is made manifest in classrooms for young children. To that end, observations and video tapes were made of four children in each of two early childhood education classrooms over a two month period of time. The observations were made in teacher directed large groups, teacher directed small group lessons, and during child-choice-time activities.

Research Questions

Young children do change their behavior as they move from context to context. However, there is not a large body of data describing the substantial character of these changes nor of the contextual conditions under which these changes occur. Like Stodolsky, this study focused on an

explication of the cognitive, linguistic, materials use, child to child engagement, and task involvement behavior of the children and related these behaviors to contextual factors of instructional format, source of pacing for the activity, and the organizational structure of the lesson (Stodolsky, 1988).

The following questions were addressed:

1. Do children in the same or similar lessons behave alike or different?

2. Do children change their patterns of behavior as they move from one lesson type to another?

3. What effects do features of the lesson (format, pacing, and organizational structure) have on shifts in the behavior of children in:

   3.1 cognitive functioning;
   3.2 materials use;
   3.3 language behavior;
   3.4 cooperative interaction; and
   3.5 task involvement?

4. What are the features of lessons which appear to evoke:

   4.1 higher and lower order cognition; and
   4.2 greater and lesser amounts of peer interaction?

Question 1 is designed to test the Barker assumption regarding the similarity of behavior among children in the same setting. Question 2 assumes such inter-lesson stability while at the same time investigating Barker's coercion effect assertion. More important, these data will be used in describing the behavioral profile of the children by lesson type thereby offering a picture of the substantial changes children make as they move from lesson to lesson.

Questions 3 and 4 are concerned with relationships between aspects of the children's behavior and features of the lesson context.

Method

Subjects. Eight children, four from each of two classrooms in a non-graded school, comprised the sample for this study. One classroom was comprised of children aged 5-7 years, the other had children from 7-9 years of age. Children were placed in each classroom on the basis of age and the results of series of developmental assessments.

The children observed were selected by the teacher in each classroom primarily on the basis of their representing typical learners. Two boys and two girls were selected from the younger group; one boy and three girls were chosen from the older group. They were all native English speaking children.

The school is located on a university campus and serves, in part, as a demonstration and research site. Although the school district has an open enrollment plan, most of the children reside in the nearby community. The population of the school is diverse by nationality, race, economic level and ethnicity.

Classrooms. The spatial structure for the classrooms was different. The classroom for the older children reflected a more traditional physical structure with a desk and chair for every child albeit arranged in different sized clusters. There were three tables in the room for small

group activities as well as separate areas for table games, unit blocks, a computer, and for children's books.

Time was the primary means by which the instructional day was organized. From 8:30 to 9:10 the children were free to choose activities. Meeting was conducted from 9:10 to 9:30 after which was snack. From 9:45 to 10:30 the children were at mathematics and from 10:30 to lunch at 11:30 was a flexible instructional time, during which time the teacher would work with individuals or small groups. The afternoon was devoted entirely to the language arts curriculum.

Children were given a considerable degree of freedom in this classroom during the open activities. At choice time they decided entirely what they would be about, and some children took advantage of this time to receive special instruction. Children were not discouraged from engaging one another in the completion of assignments, although as the data will reveal, this did not occur with any regularity. There were always two adults in the classroom, the teacher and a student teacher. From time to time subject matter specialists tutored individual children in the room while other activities were taking place.

The classroom for the younger children was designed around a series of discrete learning areas. Children did not have assigned chairs or desks; they kept their materials in cubicles and private storage trays. There was a large meeting area bounded by benches sufficient to accommodate all of the children. This was a multi-purpose area used for

meeting, whole class instruction or for small group or individual instruction. Children often used the benches as desk tops, kneeling on the floor as they completed assignments. The environment included the following separate learning areas: language arts, science, arts, unit blocks, a computer, children's literature, and a climbing structure. Small tables which could accommodate eight children were located in the language, science and arts areas. Children often used these tables to complete assignments not always related to the subject matter of the area.

Time was also the primary means of organizing this classroom. From 8:30 to 9:10 children were given choice time; from 9:10 until 9:30 meeting was held. From 9:30 to 10:30 the children engaged in language arts activities, after which there was recess and snack until 11:00 am. From 11:00 to 12:30 pm there were a variety of special classes occurring mostly out of the classroom. The afternoon was devoted to mathematics, independent reading, independent work, and whole group activities. There was always a teacher and a student teacher in this classroom as well. Often subject matter specialists and practicum students assisted in the classroom.

Procedure. Data were gathered using video tapes and field notes of entire lessons in which the subjects were participants.

Instructional Settings. The children were video taped in instructional settings which varied as to structure, teaching modality, and size of the group. Each child was video taped twice in each of the following three types of settings: (1) child choice activity; (2) teacher directed large group lessons; and (3) teacher directed small group lessons.

Taping and Data Coding Procedures. The video tapes were made in each classroom during a two month period in the spring of the school year. Arrangements were made in advance with the teachers regarding the lessons to be taped and the children to be observed. In several instances more than one subject was observed during the same lesson.

Two persons completed the video taping. One managed the camera while the other made field notes. Particular attention was given to the preparation of a narrative description of each lesson, including purpose, climate, overall response of the group of children, and the nature of activities occurring in other parts of the classroom away from the lesson being taped. These data comprise contextual elaboration for the observations made of the children.

Observational Data. For each video taped lesson, data were gathered which described the context of the lesson and the behavior of the children. These data were organized using descriptive categories taken from Stodolsky (1988), and Day, Perkins & Weinthaler (1982). Context data were comprised of three interrelated elements: (1) instructional

format or, "a global description of the overall action pattern in the [lesson] (Stodolsky, 1988, 142); (2) pacing or the source of direction in a lesson (Gump, 1967); and (3) the size of the instructional group or activity.

Features of the children's cognitive functioning, language behavior, materials use, interactive behavior, and task involvement were recorded. Data from these five categories of behavior were used to construct a profile for each child for each lesson observed. These profiles constitute each child's response to the alternative lesson types and provides a means by which behavioral comparisons across lessons can be made.

An event sampling procedure was used for coding both the context and the behavior of the children. Entries were made in both context and student behavior each time there was a shift in either category. In essence, the data were coded continuously. For purposes of analysis, the raw data were organized into five second cells; each observation referred to in the presentation of the data represents five seconds duration. These data were presented in a series of cross-tabulations representing both the context and child behavior categories. Two trained observers coded the data; interrater reliability exceeded eighty percent.

Results

Lesson Types

Children were video taped in three lesson types: total and large group, teacher directed; small group, teacher

directed; and child choice activity. It was assumed that all of the observations would easily fall into one of these categories. However, examination of the context data revealed sufficient variation in instructional format, source of pacing of the activity, and organizational structure to require the differentiation into five lesson types. Table 1 contains the data for the three context variables from which the five lesson types were drawn.

(Table 1 about here.)

The functional descriptions of the five lesson types are presented below.

Type 1: 70% total group with 30% large group structure; discussion with some individual reading format; teacher directed and teacher paced. (Included meeting, language arts, and children's literature lessons.)

Type 2: 33% total group instruction, 41% parallel seatwork, 25% total class seatwork; recitation and seatwork format; near 80% teacher paced, 20% child paced. (Reading instruction.)

Type 3: Total group; discussion and student reports format with some recitation; paced about equally by children and teacher. (An activity rising from creative writing in which authors would read excerpts of their material to the whole class and engage the others in discussion.)

Type 4: Approximately 50% large group, 25% parallel activity, 15% total group, and 10% cooperative activity; predominantly discussion and seatwork; paced 2/3 of the time by the teacher, 1/3 children. (Instruction in mathematics.)

Type 5: Children choose activity; 80% child to child pacing; wide variety in organizational structure ranging from isolate to large group. (Child choice time.)

Inter-lesson behavior congruence. Children did tend to exhibit the same kinds of behavior within a lesson, with some expected variation as to frequency and range of behaviors. To illustrate this finding, data for three children observed in a Type 1 lesson (meeting time) and in a Type 4 lesson (mathematics) are presented in Table 2. Similar results were found in each comparison.

(Table 2 about here.)

The data in Table 2 reveal two patterns. First, the children observed within each lesson behaved similarly. Second, behavior in mathematics was different from that in meetings. Such variation in the behavioral responses of the children between lesson types was consistent. The profile of children's behavior for each lesson type can be described as follows.

Type 1: Meeting. A high proportion of on-task behavior with the children seated quietly listening

to the teacher or to other children. Materials were only infrequently used and then in prescribed ways. There was no child-child interaction.

During meeting, the teacher directed the whole class of children in conventional meeting-like activities; the calendar was presented, the day's schedule was reviewed, and children made brief presentations. The children assumed a passive-responsive mode of behavior with interactions occurring between the teacher and individual children. Task involvement was implied by a child's visual attention to the events of the lesson.

Type 4: Mathematics. The children responded to questions, observed the activity of other children and illustrations by the teacher. Some time was spent in creating or constructing phenomena related to the lessons. There was little speech and that was either social or task related. Materials were used more than half of the time albeit in a prescribed way. Over two thirds of the time children were engaged with other children in math related tasks with the remaining time spent in independent study.

Even though the teacher was pacing the lessons fifty percent of the time, children were engaging other children in completing the lesson tasks. In the main, the lessons involved simple arithmetic operations

with didactic instruction by the teacher and questions from the children about the completion of exercises. The children assumed an active-responsive modality.

As the data in Table 2 reveal there was intra-lesson similarity yet inter-lesson variability in the behavior of the children.

Behavioral profiles by lesson type

Behavioral data for each lesson type have been aggregated in Table 3. The five lesson types are ordered from direct teacher control and organized large group (Type 1) to diffuse teacher control with child choice (Type 5). This order reflects the nature of children's interaction from one of primarily responsive discussion, where the pacing of the lessons was provided by the teacher, to more active-assertive behavior and increased child responsibility for activity pacing.

The data in Table 3 reveal discrete patterns of behavior by the children to the various lesson types. These patterns will be discussed in two ways. First in a comparison and contrast of the behaviors by lesson types, and second by a presentation and discussion of the behavioral profile for each lesson type.

Cognitive functioning. Cognitive functioning behaviors are arranged from lower to higher order of complexity. The first seven behaviors - from "listening" to "responding to hints"- require simple responses by the children. Behaviors

from "questioning" to "creating and constructing" require generative behavior by the children. Two comments regarding the data should be made.

First, there were few observations of higher order cognitive functioning regardless of lesson type. Second, under conditions of less teacher control, increased student pacing and varied interaction patterns there was a reduction in lower order behavior and an increase in higher order cognitive functioning. This was particularly true as regards "consideration of alternatives" and "creating or constructing". However, with increased responsibility for pacing one's activity also came substantially greater amounts of routine, playful social interaction which did not appear to include substantial cognition (non-cognitive activities) (Lesson types 2 and 5).

Language behavior. The most striking datum from language behavior is the high frequency of "no speech" in all lesson types. Even with considerable freedom from teacher supervision (parts of reading and during choice time) children used speech less that half the time. Clearly, this observation must be tempered by the realization that in large groups such as meeting time each child will have infrequent opportunities to speak. Moreover, one could argue that observations of speech near 50% of the time could suggest a rather intense language environment if one considers time necessary for responsive speech by other participants in the group. And, these data

cannot in any way be interpreted to suggest that the classrooms were quiet; language was pervasive, most often by the teacher's engagement with one child at a time.

However, these data suggest a positive relationship between an increase in child participation in the management of the lesson, a reduction in the size of the group, a more interactive organizational structure, and an increase in the amount, variety, and complexity of children's' speech. In large group, teacher directed lessons (Type 1) there was little child speech (92% no speech) while in choice time (Type 5) there was a moderate amount of speech (35%) about equally divided between social and cooperative speech. The greatest amount of speech was observed in Type 2 lessons (43%), however, it was predominantly recitation speech. "Talking to oneself" was observed to some degree in lesson types 2 and 5. In each of these lesson types children were alone for substantial periods of time; in Type 2 lessons completing seatwork assignments and, in Type 5 lessons engaged in inventive and creative activity. Such behavior may reflect the child's working through new ideas or engaging in problem solving behavior (Vygotsky, 1986).

Materials use. The relationship between lesson type and materials use is even stronger than for language. Materials use increases as one moves from Type 1 to Type 5 lessons accompanied by movement away from "prescribed use" to substantial amounts of "inventive" and "idiosyncratic" use in lesson types 4 and 5. However, the fact is that

materials were infrequently used in any lesson and typically in a "prescribed" way. This observation is especially cogent at a time when conventional wisdom suggests that manipulative-constructive engagement of young children enhances learning and development (Forman & Kushner, 1977; DeVries, 1988; Hohmann, Banet & Weikert, 1979).

Interaction. This category focuses on the spectrum of behavior ranging from independent and isolate activity to cooperative interaction. The variable "no evidence" refers to times when the instructional mode was such that independent, associative and cooperative behavior were precluded. Meeting time for the whole class directed by the teacher would be an example of a lesson with "no evidence" of interaction. The percentage of "no evidence" recorded during choice-time reflects children's off-task and transition behavior as well as interventions by the teacher for one matter or another.

These data mirror that for language and materials use. Type 1 lessons made no provisions for child interaction whereas such provisions were present 70% of the time during Type 5 lessons. It should be made clear that "independent activity" in lesson types 2 and 4 were related to seatwork assignments. Furthermore, "associative activity" - engagement with at least one other child when one child is leading the activity - occurred in settings with substantial student reports (Type 3) and with considerable child pacing of the lessons in smaller group arrangements. However, the

greatest amount of cooperative and proto-cooperative interaction occurred in Type 4 (34.8%) during discussion activity and in choice time (38.5%). It should not go unrecognized that the greatest amount of child-child cooperative interaction (16.7%) occurred during choice time.

Task Involvement. Stodolsky (1988) and Kounin and Sherman (1979) have reported that children in school tend to manifest school-like behavior: they participate in the activities of the classroom with seeming interest and attention. The children in this study were no exception. They were observed on-task from 75% to 92% of the time, with the higher percentage of off-task behavior observed under conditions of child-pacing (Type 5) and independent seatwork (Type 2). This datum lends support to the suggestion by Rosenshine (1979) and others that greater attention to tasks occurs under conditions of more direct teacher supervision. However, it seems that inattention to tasks up to 25% of the time is no cause for alarm especially when pacing of on-task behavior is a function of the child's engagement rather than teacher direction.

Lesson Type 1 Behavioral Profile. Type 1 included meeting, language arts and literature lessons. The language arts lessons were designed to introduce letters and their sounds. In one lesson the teacher used an alphabet book with letters and pictures to represent words beginning with each letter. The children attended to the teacher and the book as the teacher pronounced the letters and words. Other

lessons had a similar structure. The literature lesson included the entire class. Children sat at benches listening to other children read aloud from books they had selected or from papers they had written. Meeting was a highly directed teacher activity in which all of the children sat in a circle. Such activities as fixing the calendar, show-and-tell and announcements were routine. The teacher also used this time to introduce new letters to the children by pronouncing them as she wrote them on the board.

The large group of children, typically the whole class, attended to the verbal instructions of the teacher or the readings of other children. Each child was only occasionally called upon to answer a question or engage in a brief discussion. Most of the time children were expected to remain silent.

Lessons were presented didactically through lecture; children did not use materials. There was very little opportunity for interaction among the children or with the teacher. Children gave every indication of being on-task albeit in a passive-responsive mode.

Lesson Type 2 Behavioral Profile. Children in Type 2 lessons spent most of their time in small, teacher directed instructional groups, attended to the reading of peers, or were asked to read short passages aloud. These instructional settings were not substantially different from those which have existed over the decades. At other times

the children were assigned to seatwork tasks to be completed independently.

In small group settings the lessons were paced by the teacher; children were asked to give their attention to instruction. They listened and responded to questions. At seatwork children were expected to pace their own work.

Children's speech was either recitation, when in the didactic groups, or social speech, when at independent activity. However, speech occurred less than half the time. Moreover, there was a substantial decrease in on-task behavior when the children were in independent activity. They worked sporadically at their tasks, enjoyed social conversation but were not disruptive. There was a substantial amount of non-cognitive behavior related to both off-task behavior and social speech.

In lesson type 2 there was a bi-modal character to the behavior of the children. In small group instruction the children were passive-responsive; reading aloud, listening to others read or engaged in recitation speech, all lower order cognitive activities. However, at seatwork they were active-interactive in the sense of pacing their task involvement. Furthermore, there was substantially greater off-task behavior as they either disengaged from the task or engaged peers in social interaction.

Lesson Type 3 Behavioral Profile. Type 3 lessons were organized around a child reading his/her composition with discussion led by the author and the teacher. The rest of

the class would be seated close together on the floor facing the teacher and a student. Children were expected to quietly attend to the readings, questions, and teacher's comments in a relaxed and casual setting. Pacing of the activity was shared by the teacher, managing the lesson, and the author, reading his/her work. There was a substantial amount of give-and-take among the children and with the teacher.

The reading activity required a passive-attentive mode of behavior. Discussion called for an active-assertive posture manifest in children responding with alacrity to each segment of the lesson. There was no substantial evidence of higher order cognitive activity; most cognition was limited to listening, recalling, commenting on the readings, and asking and responding to questions. However, the setting was such that children could have posed hypothetical questions, engaged in reasoned inquiry, or suggested alternative explanations. Why this did not occur remains elusive. It should be pointed out that the material serving as the basis for the lesson, the children's writings, did presumably elicit higher order cognitive activity.

The children were attentive to the lesson albeit without materials manipulation. All interaction in this lesson was language based.

Lesson Type 4 Behavioral Profile. Mathematics was the subject matter of Type 4 lessons. The instructional context

varied considerably from the previous three lesson types in the sense that children were organized in four quite different configurations: some cooperative activity, a bit more total class instruction, about 25% of the time in parallel activity, and 50% in groups larger than five children. The teacher paced activities 70% of the time. There was substantial associative and cooperative interaction, more often than not in situations in which materials were being used.

In this situation, children were often seen moving about from place to place, receiving instruction by discussion with the teacher and peers, completing written tasks but also engaging in inventive materials use.

There still was not much speech. However, what was recorded typically involved interchange with other children. There was much less didactic teaching; more teaching by illustration and questioning with a modicum of creative and/or constructive cognitive functioning. However, as conventional mathematics instruction would suggest, the children spent one-sixth of the time completing worksheets, greater by four times than in any other lesson type.

In Type 4 lessons children were actively engaged in the substance of the subject matter. They were completing arithmetic operations, manipulating phenomena related to those operations, and engaging peers and the teacher quite regularly. They were given substantial responsibility for

pacing their engagement and met that responsibility quite well; they were actively assertive.

Lesson Type 5 Behavioral Profile. Type 5 lessons were defined as child-choice time. These were the times during the day when children were given the responsibility for choosing activities and the patterns of interaction they sought. The teacher was responsive to requests for assistance from the children and such assistance ranged from answering questions, and providing directions, to tutoring. Children used this time to socialize with friends quite without school-task engagement, for the completion of work assignments given at other times during the day, for solitary engagement with such mechanical devices as the computer, and for intense, cooperative, exploratory activities. Teachers only infrequently paced the activities of the children.

Children were engaged in associative and cooperative activity nearly 40% of the time, most in groups of 2-3 or 3-5 children. Such activity included a substantial amount of higher order cognitive functioning primarily in the form of "consideration of alternatives" and "creative" activity. Materials played a substantial role in the activities of children particularly as regards their more inventive and idiosyncratic use. As might be expected, there was more speech under this condition than in any of the other lesson types. Furthermore, the variety of speech was greater, too, including more than a little "talking to oneself".

In choice-time children also were alone - engaged or not. During such independent activity they read, completed assignments, worked on the computer or day-dreamed. As one might suspect, there was substantial incidence of non-cognitive behavior, but only 15% of that was off-task. In sum, children engaged one another in complex social and cognitive activity most of the time but they also used this time as escape from routine school tasks. Children's behavior varied over time from being active-assertive in small groups and alone, to an inactive-inattentive modality.

Discussion

This study began with the purpose of describing the behavioral profiles of the same children in different lesson settings. The project was based, in part, on the assumption that Barker's (1968) assertion of setting specific behavior would be observed. As the data make clear, this assertion is supported: the behavior of children in the same lesson was remarkably similar, a pattern which was maintained over five lesson types. Also, this finding lends support to the ecological psychologist's notion of the coercive effect of setting on behavior. The similarity of behavioral profile among the children in the same lesson suggests that factors other than the child's motivation or personality were affecting their response to any setting.

This finding is congruent with those from studies by Smith and Connolly (1980), Weinstein (1977), Gump (1967), Kounin and Sherman (1979), and Stodolsky (1988). And,

though this finding is not new, there seems to be a dearth of acknowledgement of the influence of context on lesson-specific behavior of children in efforts to construct effective learning environments. Perhaps it is time that this regularly observed phenomenon be recognized for its importance in educational planning.

However, it is in the examination of the profiles that one finds the most exciting data. The dependent nature of the observations makes the application of inferential tests of relationships problematic. Nonetheless, an examination of the data in table three strongly suggest a relationship between the context of the lesson and child behavior, particularly interactive behavior. If Type 1 lessons can be characterized as large group, teacher directed and controlled and Type 5 lessons as independent and small group activities, arranged by the children, and paced by their activity, one can say that as the children move from lesson type 1 to lesson type 5 there is an increase in higher order cognitive functioning, generative materials use, speech of all types, and associative and cooperative task related interaction. Not only do children respond to the requirements of each lesson type in similar ways, the context of the lesson appears to have considerable influence on the degree to which children are able to engage in active learning.

The low frequency of children's speech and materials use in most lessons needs to be commented upon. The nature

of the instructional format and the group size appear to preclude substantial amounts of individual child speech and open-ended materials use. The recurring use of a didactic teaching style through oral presentation and recitation requires a passive-responsive behavior modality by the children. Except during child-choice time, children tended to be quiet and used materials in only prescribed ways.

The relative open structure of choice-time seemed to elicit what could be termed as the highest frequency of growth productive behaviors. In terms of social cognition, children sought the engagement of others as they completed tasks. They engaged in substantial amounts of creative and inventive materials use, explored alternatives, and maintained a high proportion of task involvement. These are the kinds of behaviors early childhood educators hope children will acquire. There may be a lesson in these data.

For the past two decades there has been an increase in attention among researchers and teachers about cognitive style. In brief, students in human behavior from Witkin (1978) to Kagan (1976) and more recently with Gardner (1983) and Sternberg (1990) have suggested the possibility of a dominant intellectual modality in each of us that directs the way in which we engage in understanding our world. This idea has been extrapolated to the extent that it is being suggested that teachers find ways of determining the learning or cognitive style of each child and subsequently teach to it as a means of producing maximum learning.

Though the data from this study are insufficient to refute such ideas, they are sufficiently clear to suggest that the idea of dominant cognitive interaction modalities ought to be carefully considered.

Each child in this study altered the ways in which he or she responded in a lesson in what appears to be a direct response to the conditions of the lesson. That is, each child was able to employ a means of learning which was congruent with the type of lesson and continue to give evidence of remaining on-task.

Though we would want students of human behavior like those just mentioned to continue to inquire about the nature of the human response to various phenomena, early childhood educators might find it more useful in the interim to attend to the ways in which the setting of the classroom and the lesson affect the behavior of the children.

REFERENCES

Barker, R.J. (1968). Ecological psychology. Stanford, CA: Stanford University Press.

Day, D.E., Perkins, E. & Weinthaler, J. (1982). The Behavior Checklist of Child-Environment Interaction. Amherst: The University of Massachusetts.

DeVries, R. (1987). Programs of early education: The constructionist view. New York: Longman.

Forman, G., & Kushner, D. (1977). The child's construction of knowledge: Piaget for teaching children. Monterey, CA: Brooks/Cole.

Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. New York: Basic Books Inc.

Gump, P.V. (1967). The classroom behavior setting: Its nature and relation to student behavior. Final report, U.S. Office of Education, Project no. 2453. Lawrence: University of Kansas.

Hohmann, M., Banet, B., & Weikert, D.P. (1979). Young children in action: A manual for preschool educators. Ypsilanti, MI: The High/Scope Press.

Kogan, N. (1976). Cognitive styles in infancy and early childhood. Hillsdale, NJ: Erlbaum.

Kounin, J.S., & Sherman, L.W. (1979) School environments as behavior settings. Theory Into Practice, 18,(3), 145-151.

Oxford, R.L., Morrison, S.B., & McKinney, J.D. (1979). Classroom ecology and off-task behavior of kindergarten students. Journal of Classroom Interaction, 15,(1), 34-40.

Rosenshine, B.V. (1979). Content, time and direct instruction. In P.L. Peterson and H.J. Walberg (Eds.), Research on Teaching. Berkeley, CA: McCutchan.

Smith, P.K. & Connolly, K.J. (1980). The ecology of preschool behaviour. Cambridge, England: Cambridge University Press.

Sternberg, R.J. (1990). Thinking styles: Keys to understanding student performance. Phi Delta Kappan, 71,(5), 366-371.

Stodolsky, S.S. (1988). The subject matters. Chicago: The University of Chicago Press.

Vygotsky, L.V. (1986). Thought and Language. Cambridge, MA: MIT Press.

Weinstein, C.S. (1977). Modifying student behavior in an open classroom through changes in the physical design. American Educational Research Journal, 14,(3), 249-262.

Witkin, H.A., Moore, C.A., Goodenough, D.R., & Cox, P.W. (1977). Cognitive styles and their educational implications. Review of Educational Research, 47,(1), 1-64.

Table 1

Instructional Format, Pacing, and Organizational Structure by Lesson Type

	Lesson Types 1	2	3	4	5
FORMAT					
Seatwork	.4%	18.0%		32.0%	
Recitation		71.5	11.5		
Discussion	85.6		42.1	58.5	
Check Work				.1	
Student Reports		.5	40.9		
Giving Instructions	1.4	1.9	5.5	7.2	
Tutorial		4.9			
Transition	.7			2.0	6.1
Choice					93.9
Reading	11.8				
Other				1.0	
PACING					
Teacher	99.7%	78.9%	54.4%	67.7%	11.8%
Child	.3	18.4	45.6	32.3	28.1
Child to Child					46.4
Mechanical	2.7				13.7

Table 1 (continued)

Instructional Format, Pacing, and Organizational Structure by Lesson Type

Context	Lesson Types 1	2	3	4	5
ORGANIZATION FOR INSTRUCTION					
Total Class	70.7%	33.3%	100.0%	15.1%	3.3%
Seatwork - all		25.2			
>5, <total class	29.3			52.5	4.8
3-5 parallel				9.5	4.8
2-3 parallel		41.4		13.2	11.8
3-5 cooperative					35.8
2-3 cooperative				9.6	18.0
Isolate activity				.1	17.5

Table 2

Within Lesson Behavior: Meeting and Mathematics

Child	Type 1 (Meeting) 1	2	3	Type 4 (Math) 1	2	3
COGNITIVE FUNCTIONING						
Non-cognitive act.	10.0%		9.7%	23.5%	13.2%	7.9%
Listen to teacher	27.9	66.7%	37.1	4.9	10.1	19.9
Observ. illustration	1.4			8.8	14.5	18.4
Observ. child	22.9	20.8	38.7	7.5	8.1	18.0
Worksheet				9.8		
Respond to questions	34.3	5.2	14.5	30.0	25.0	34.6
Respond to hints	1.4			.8	.7	.8
Questioning				.3	.3	
Volunteering	2.1	7.3		1.0	2.7	.4
Test hypotheses				1.6		
Reasoning				1.6		
Creating/constructing				10.3	25.3	
LANGUAGE						
No speech	85.7	95.8	97.6	81.7	83.1	98.9
Social speech				8.5	8.1	.4
Recitation speech			2.4		.5	
Assisting speech	10.7	3.1		1.0	2.0	.8
Cooperative speech	1.4			5.9	4.0	
Inquiring speech	.7			.8	1.7	
Inventive speech	.7					
Talking to self	.7	1.0		1.6	1.0	

Table 2 (Continued)

Within Lesson Behavior: Meeting and Mathematics

	Meeting			Math		
	1	2	3	1	2	3
MATERIALS USE						
No material use	80.0%	100.%	90.3%	41.1%	48.6%	65.4%
Prescribed use	17.9		9.7	47.8	26.4	34.5
Inventive use				11.1	25.0	
Abuse	2.1					
INTERACTION						
No evidence	100	100	100			
Independent action				22.5	28.7	
Associative action				33.3	37.2	34.6
Cooperative action				36.2	21.6	51.9
TASK INVOLVEMENT						
On task	97.9	100	100	77.3	90.2	92.1
Off task	2.1			20.7	9.8	1.9
Transition				2.1		.6

Table 3

Children's Behavior by Lesson Type

	Lesson Types 1	2	3	4	5
No. of observations	(1297)	(538)	(930)	(1328)	(1811)
COGNITIVE FUNCTIONING					
Non-cognitive act.	9.9%	26.6%	13.4%	12.9%	34.0%
Listening to teacher	46.9	27.1	28.4	11.4	4.9
Observ. illustration	4.7			10.4	
Observ. child	21.5	9.8	30.3	9.4	4.1
Oral recall		11.8	15.2		1.7
Worksheet	.3	2.4		16.1	4.5
Respond to questions	7.9	21.4	10.6	27.2	1.8
Respond to hints	2.9	.2		.9	.4
Questioning	.3			.4	.7
Volunteering	1.9		.3	1.6	.2
Hypothesize	.3				.1
Test hypotheses				.4	.1
Reasoning	.1	.2	.3	.4	1.9
Consider alterns.					20.7
Creating/constructing				8.9	25.1
TASK INVOLVEMENT					
On task	91.5	74.3	90.1	88.7	79.4
Off task	6.2	25.7	9.9	9.4	15.1
Transition	2.3			2.0	5.7

Table 3 (Continued)

Children's Behavior by Lesson Type

	Lesson Types 1	2	3	4	5
LANGUAGE					
No speech	91.9%	57.3%	69.4%	88.6%	64.5%
Social speech		15.9	3.1	5.4	12.8
Recitation speech	2.1	21.2	17.4	.5	3.1
Assisting speech	3.7	.9	8.5	.9	.4
Cooperative speech	.5			2.8	12.6
Inquiring speech	.5	.2	1.1	1.1	1.8
Inventive speech	.1		.5		.4
Talking to self	.6	4.4	.6	.8	4.9
MATERIALS USE					
No material use	96.5	29.2	82.2	40.9	35.6
Prescribed use	3.8	70.6	17.8	40.8	38.9
Inventive use				18.3	4.4
Idiosyncratic use					19.2
Combining mats.					1.9
Abuse	.2				
INTERACTION					
No evidence	99.4	80.7	59.1	38.3	30.2
Independent action	.6	17.9	.2	26.9	27.9
Get teacher assist					3.4
Give assistance		1.4	.4		
Associative action			40.4	26.3	21.8
Cooperative action				8.5	16.7